

REMARKS

Claims 17-19 and 21-33 remain in the application, claims 28 and 31 having been editorially amended. Reconsideration of the application and allowance of all claims are respectfully requested in view of the above amendments and the following remarks.

The rejection stated in paragraph 3 of the Office action is respectfully traversed.

The attention of the examiner is directed to page 5 of the application where lines 23-27 describe the hearing aid in communication with the control device and the delivery of test signals to the receiver, and lines 28-35 describe a switch means which, while said hearing aid is in communication with the control device during the in-situ fitting, may *optionally* be switched between the first and second positions. This clearly describes that the switch may be in either position while the hearing aid is in communication with the control device and is receiving test signals. Further, the paragraph at lines 7-15 of page 6 of the specification describes the bypassing of the voltage divider in all situations where the enlarged dynamic range is not needed, “in particular” in normal use of the hearing aid. The only logical reading of this passage is that the normal use of the hearing aid is not the only time when the enlarged dynamic range is not needed.

Attention is further directed to lines 10-14 of page 11 of the specification where it is stated that the low noise mode “*may* be necessary in connection with the in-situ fitting of hearing aids with persons having normal hearing in at least some frequency bands”. This clearly states that the low noise mode is not necessary in all in-situ fitting operations. At a minimum, the

specification describes at lines 22-33 of page 2 that the low noise amplifier state is only needed if the person has normal hearing in some frequency ranges.

The statement in the application that the voltage dividing resistor network is bypassed in all situations except fitting does **not** preclude that it may also be bypassed during fitting in some instances.

For the above reasons, it is submitted that the specification as originally filed does indeed support the subject matter of claims 17-19 and 21-27 regarding the voltage divider being bypassed in some cases in the fitting mode as well. Indeed, in the excerpt of claim 17 quoted by the examiner, the examiner has overlooked the word “optionally” which was included in claim 1 as originally filed and indicates that the switch may be in either state even when the hearing aid is in communication with the control device during the in-situ fitting as recited earlier in claim 1.

The rejection stated in paragraphs 4-6 of the Office action is also respectfully traversed.

Regarding claim 22, the attention of the examiner is directed to the passage at lines 19-25 of page 8, which clearly states that only the final stage of the amplifier is shown, and that this stage is a digital/analog converter. The amplifier must thus include a digital analog converter, and by including such, it must be a digital amplifier. The same would apply to the wording digital amplifier in claim 32.

Regarding the comments about claim 32 in paragraph 6 of the Office action, claim 32 depends from claim 28, not claim 22, although this appears to simply be a typographical error in the language quoted by the examiner is from claim 28. In any event, however, it is not clear

what the examiner is objecting to. Claim 32 says that the attenuation means attenuates the output signal from the digital amplifier, which is clearly supported in the specification. If the issue is that claim 28 already recites that the amplifier output is of reduced dynamic range, and claim 32 then describes further attenuation, this has been corrected by the amendment to claim 28 to clarify that the attenuation means referred to in claim 32 is the same attenuation means which produces the reduced dynamic range signal.

In paragraphs 7-10 of the Office action, the examiner has rejected claims 28 and 33 for anticipation by Lindemann. This rejection is respectfully traversed.

The examiner refers to the amplifier 218 in Lindeman as a digital amplifier, and explains this by saying that since the term is not defined in the specification the examiner can interpret it “in any manner consistent with the term.” Applicants do not agree that this is a correct statement of the law. But even accepting this as the standard for claim interpretation, the term digital amplifier is well known and understood by those skilled in the art, and examples are given in the specification. The lack of a precise definition in the present application, does not alter this, and does certainly not allow the broad interpretation of Lindemann proposed by the examiner. The only mention in the Lindemann specification that is remotely relevant is the statement at lines 28-33 of column 7 that the controller 218 adjusts the amplitude of the audio signal as a function of frequency in response to control signals from the fitter. That is not itself enough to make the controller a “digital amplifier.” When reading the discussion beginning at line 18 of column 6

and continuing over to line 37 of column 7, it is clear that the controller 218 does not serve as a digital amplifier.

In any event, it is also the case the hearing rehabilitator 216 of Lindemann is not an attenuation means. Rather, as understood from lines 30-32 of column 6, it comprises a block with a program for filtering, amplification and compression, i.e. what is normally understood as the correction of the hearing deficiency.

The hearing rehabilitator 216 in Lindemann is where one would find the amplifier of the claimed invention. But claim 28 requires that it generate an output signal with a first dynamic range. Claim 28 then further requires that there be a second mode of operation where the same amplifier which provides the amplifier output with a first dynamic range now operates to receive a test signal and to generate, in cooperation with an attenuation means, an amplifier output with a second dynamic range shifted relative to the first dynamic range. The only thing in Lindemann which operates on the amplifier output signal is the controller 18, but there is nothing to suggest that this is resulting in a dynamic range shifted relative to the dynamic range of the amplifier output signal in the normal mode.

The expression “dynamic range” is also well known by the skilled person, and is moreover defined in the claim as the range between the amplifier noise level and the maximum output level. Claim 28 clearly indicates that the second dynamic range is shifted, with respect to the first, thus implying that the amplifier noise level is also shifted, due to the attenuation thereof.

Lindemann does not teach any shifting of dynamic ranges. If the dynamic range is in any way altered in Lindemann, as described in connection with the second diagnostic test in column 5, lines 23-38, it is not shifted but merely narrowed by reduction of the gain, within the maximum achievable gain.

Finally, the invention uses a hearing aid comprising the basic elements: microphone 12, digital signal processor 14 and output transducer 5. The skilled person will understand that it is common practice that the digital signal processor comprises the usual functions for correcting the hearing deficiency, such as filtering and amplification. The element referred to as attenuation means contains another functionality in excess of the elements for correcting the hearing deficiency. More specifically, it serves only to attenuate the noise level on the output, thus allowing the dynamic range to be shifted downward.

For the above reasons, it is respectfully submitted that the subject matter of claims 28 and 30 is not taught by Lindemann.

The rejection of claims 28-30 in paragraphs 11-14 is respectfully traversed.

Claim 28 is directed to a hearing aid. Lutz is not a hearing aid, but is an audiometer. An audiometer does not correct for impaired hearing but instead analyzes the hearing characteristics of an individual. Moreover, Lutz does not teach a digital amplifier. Fig. 2 shows very clearly that the switchable gain circuit 100 is an analog circuit.

The rejection discussed in paragraphs 15-19 of the Office action is respectfully traversed.

Cook does not disclose a hearing aid, but simply a tone generator. Further, the drawings clearly show that the amplifier 62 is an analog amplifier with analog input and output. Still further, the resistor network is located on the input side of the amplifier, and will thus not be able to attenuate the inherent noise produced by the amplifier, and consequently not be able to shift the dynamic range.

Regarding the comments of the examiner in paragraphs 20-23 of the Office action, it is noted that claim 28 recites in-situ fitting, which requires the hearing aid to act as an audio signal source. Further, claim 28 has now been amended to specifically recite that the hearing aid acts as the audio signal source for the audio signal used during the fitting.

In situ fitting is well understood to describe fitting with the hearing aid in its normal position. Both Lindemann and the present invention operate “in situ,” and that is not the issue. But Lindemann provides for testing of the user’s hearing but does not teach or suggest anything for shifting the dynamic range of hearing aid amplifier output when operating in a second mode vs. a first mode.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Amendment Under 37 C.F.R. § 1.111
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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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